

REMARKS

Objection to Specification Under 35 U.S.C. §112:

The Specification has been objected to under 35 U.S.C §112 on the basis that limitations recited in claims 10-11, 21-22, and 30-31 were merely hinted as possible modifications to the invention and no circuit diagrams or suggestion were provided to make the modifications as hinted.

The foregoing objected to claims are supported by the Specification as evidenced by the following statements. On page 5, the Drop Bus Interface is defined as the interface where data flows from the physical layer device to the link layer device. This definition is repeated on page 7. On page 35, it is stated that the Drop Bus is a byte wide serial bus. On page 7, lines 3-6, it is stated that the Add Bus Interface interfaces data flowing from the Link Layer Device to the Physical Layer device. On page 63, lines 9-12, it is stated that the SBI336S allows for an in-band communications channel between devices at either end of the serial bus and that this is a full duplex channel. Thus, it is clear that communications through the Drop Bus interface and through the Add Bus Interface utilize the same in-band communications channel with the Drop Bus Interface carrying half of the full duplex channel and the Add Bus Interface carrying the other half of the full duplex channel. On page 63 and 64, it is stated that the in-band channel includes two bytes of fixed header that provides control and status between end devices. Claims 1, 12, 21 and 23, as amended, contain the foregoing as a limitation and are fully supported by the Specification.

Non-enablement of claims 10-11, 21-22 and 30-31

Claims 10-11, 22 and 30 have been canceled while claims 21 and 31 have been amended. Claim 21 has been revised to reflect the fact that the in-band communications channel is a full duplex channel with the Add serial interconnect carrying half of the full duplex channel and the Drop serial interconnect carrying the other half of the full duplex channel. This is supported by the statement on page 63, lines 11-13, with respect to the SBI336S. Moreover, as indicated in

lines 19-21 of page 63, 4 bytes of each 36 byte in-band message are reserved for end-to-end control information. The precise bit structure which is allocated to the in-band channel is also discussed. Consequently, the limitation in claim 21 is fully supported by the disclosure. Claim 31, being directed to a full duplex in-band communications channel and the Add and Drop Buses each carrying half of the full duplex channel, are also supported as indicated for claim 21. Also, the Specification fully supports claims 10-11, 21-22 and 30-31, as amended.

IN THE CLAIMS:

Claim objections as to claims 9, 20

In claims 9 and 20, the acronym LVDS has been replaced by “serial differential” interfaces.

Obviousness objections to claims 1-8, 10-19, 21-31

The Examiner has rejected the above-captioned claims under 35 U.S.C. §103(a) over Applicant’s Admitted Prior Art (AAPA hereinafter) in view of Sturm, et al. (“Sturm”).

Claims 1, 12, 23:

The Official Action states that AAPA does not specifically disclose the in-band channel but that Sturm does disclose the bi-directional serial link 60 and that the combination of AAPA and Sturm would have been obvious to one of ordinary skill in the art at the time the invention was made.

Sturm discloses an entire serial link as the channel whether full duplex using a pair of differential pairs or half duplex using a single differential pair or single-ended wire. In Applicant’s invention, the in-band channel utilizes only a fraction of the available bandwidth of the serial interconnect as discussed above and at page 63 of the specification. Moreover, Applicant’s in-band channel is reserved only for end-to-end control and status information whereas Sturm’s channel is shared by all control information and data and requires a means for

distinguishing between the two. Thus, the in-band channel of Applicant is not contemplated by Sturm.

Claims 2, 13, 24:

These claims are rejected under 35 U.S.C. §103(a) in view of AAPA in view of Sturm. In Sturm, packets are of variable length and no timing information is conveyed. A 8B/10B encoding is used to distinguish data from control signals, both of which share the same line. Packets in Sturm may start one cycle earlier or later without impacting functionality.

In the present Application, the frames carrying the client tributaries are of fixed length and timing information is of primary concern. The special 8B/10B encoding scheme needs to encode precise timing relationship between the payload rate of the client and the line rate of the serial stream used to transport the client. This level of precision is not necessary in packet systems and is, therefore, not contemplated by Sturm. Consequently, Sturm does not disclose conveying timing control information via 8B/10B encoding and claims 2, 13, and 24 are, therefore, not obvious from AAPA in view of Sturm.

Claims 3, 14 and 25:

The Official Action asserts that AAPA discloses the serial bus interface supporting fractional links. Fractional rates over scaleable band interconnects is novel. It is not understood which specific disclosure in AAPA the Examiner is relying on as showing support for fractional rates.

Claims 4, 15, 26:

See comments regarding claims 3, 14, and 25 above.

Claims 5, 16 and 27:

Pages 6-7 of the present Application are not “Background” pages and do not constitute an admission of prior art. They are definitions established to form a basis for later discussion.

Claims 6, 17, 28:

See comments regarding claims 3, 14, and 25 above.

Claims 7, 18:

It is obvious that anyone skilled in the art will realize that serial interconnects can be scaled in multiples to carry more data. In the present Application, the scaling of tributaries is of concern and is limited to multiples of four to maintain the structure required to manage timing control information using extended 8B/10B encoding. In claims 7 and 18, the scaling is for number of clients carried on the serial interconnect.

Claims 8, 19, 29:

It is not clear which disclosure in AAPA is being relied on in this case.

Claims 10-11, 21-22, 30-31:

As indicated under the discussion of non-enablement, Sturm’s in band half-duplex channel occupies the full bandwidth transmitting both control information and data. Applicant’s in-band channel transmits only control and status information and no client data and occupies only a fraction of the bandwidth of the interconnect.

Rejection of claims 9 and 20:

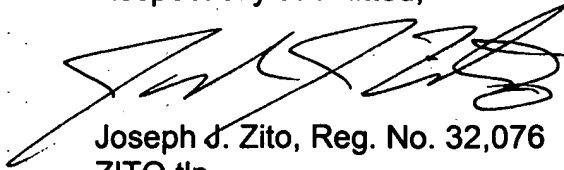
Applicant has amended claims 9 and 20 to read “serial differential” rather than “low-voltage differential” receivers.

In view of the above-mentioned distinctions and comments,

Applicant submits that the case is now allowable and favorable re-consideration is respectfully solicited.

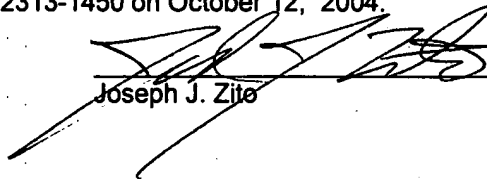
Application No. 10/062,309

Respectfully submitted,



Joseph J. Zito, Reg. No. 32,076
ZITO tlp
26005 Ridge Road, Suite 203
Damascus, MD 20872
(301) 601-5010

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 12, 2004.



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Date